




## MEMORANDUM

Missouri Department of Transportation  
Maintenance Operations  
2211 St. Mary's Blvd.

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**TO:** All District Engineers

**CC:** Eileen Rackers-tr

**FROM:** Jim Carney   
State Maintenance Engineer

**DATE:** April 11, 2005

**SUBJECT:** Temporary Traffic Control  
Traffic Control for Field Operations Revision  
Pavement Marking Guidelines (Pages G-16 & 17)  
Pavement maintenance Operations Guidelines (Page G-28)

The following paragraphs reflect changes in the "Guidelines" section of the *Traffic Control for Field Operations* manual. The new guidance, which provides better clarification of temporary pavement marking materials and requirements, is effective May 1, 2005 and will be incorporated into the next revision of the referenced document.

### **Pavement Markings**

Pavement markings are the primary means of channelizing and providing guidance to traffic. However, when temporary traffic control activities impact the use of a roadway, or when operations eliminate permanent pavement markings, existing pavement markings, or lack thereof, can confuse the motorist.

**Changes in roadway use** caused by long-term operations should be accompanied by pavement marking revisions (i.e., the removal or obliteration of any pavement markings that are not applicable to current roadway use and the installation of temporary pavement markings). For operations of shorter duration, the other temporary traffic control devices (e.g. channelizers, signs, etc.) deployed will be relied on to provide traffic with the needed channelization and guidance cues. Pavement marking revisions for shorter duration operations may be a possibility; but, should be considered on a case-by-case basis.

**Elimination of permanent pavement markings** for a distance of 200 linear feet or more caused by operations such as leveling course, patching, seal coat, spot sealing, crack pouring, milling, and scrub sealing shall be accompanied by the installation of temporary centerline and lane line pavement markings and, as applicable, NO CENTER STRIPE signs.

There are four means typically used to provide temporary pavement marking – preformed short-term pavement marking tape, Type 1 temporary raised pavement markers, Type 2 temporary raised pavement markers, and pavement marking paint.

**Preformed short-term pavement marking tape** consists of a four-inch wide retroreflectorized tape with a pressure-sensitive adhesive on the back. The tape, available in white and yellow, may be used to provide a surrogate permanent pavement marking or it may be cut into four-foot long sections and applied to the road surface at 40-foot intervals as a temporary pavement marking. The length and spacing of the latter pavement marking may be reduced to one-half when marking intersections, ramp gores, and other transition areas. This material is typically used to temporarily mark changes in normal roadway use and to provide temporary marking of centerlines and lane lines when permanent pavement markings are eliminated. It is not recommended for locations where the material will be subjected to heavy traffic, in areas of heavy turning movements, on short radius curves, or on roadways having loose aggregate on the surface, as the material will not adhere well under these conditions.

**Type 1 temporary raised pavement markers** consist of an L- or T-shaped flexible tab with a retroreflective sheeting on both faces of the vertical section and a pressure-sensitive adhesive on the base. These markers, available in white and yellow, are typically used to temporarily mark centerlines and lane lines by applying them to the road surface at 40-foot intervals prior to, or after depending on the type of surface treatment, an operation and removing the protective film covering the retroreflective sheeting upon completion of the operation. This spacing may be reduced to one-half when marking intersections, ramp gores, and other transition areas. Type 1 markers are the preferred means of providing temporary marking on rough surfaces.

**Type 2 temporary raised pavement markers** consist of a plastic dome with reflectors on the sides and a pressure-sensitive adhesive on the base. These markers, available in white and yellow, are typically used to temporarily mark changes in normal roadway use by applying them to the road surface at 40-foot intervals. This spacing may be reduced to one-half when marking intersections, ramp gores, and other transition areas. Type 2 markers work well on concrete and smooth asphaltic surfaces.

**Pavement marking paint** consists of applying a four-inch wide strip of acrylic waterborne paint with drop-on glass beads for retroreflectivity. The paint, available in white and yellow, may be used to provide a surrogate permanent pavement marking or it may be applied in four-foot long sections at 40-foot intervals as a temporary pavement marking. The length and spacing of the latter pavement marking may be reduced to one-half when marking intersections, ramp gores, and other transition areas. This material is typically used to temporarily mark changes in normal roadway use and to provide temporary marking of centerlines and lane lines when permanent pavement markings are eliminated.

In addition to providing temporary pavement markings, **NO CENTER STRIPE signs** may also be warranted. NO CENTER STRIPE signs are black-on-orange warning signs used on two-lane and two-lane with auxiliary lane facilities where no-passing zone centerline marking is eliminated for 200 linear feet or more. These signs are placed in advance of the missing no-passing zone centerline marking area at the prescribed sign spacing. For extended areas continuously or intermittently missing no-passing centerline marking, NO CENTER STRIPE signs should also be installed within 150 feet after the intersection of a state highway and at one-mile spacing throughout the affected area. Upon the discretion of the supervisor, additional NO CENTER STRIPE signs may be installed within 150 feet after other intersections. When a sign placed at the one-mile interval and one placed after an intersection fall within one-eighth mile of each other, the sign placed at the one-mile interval may be eliminated.

When temporary pavement markings are necessitated by either a change in roadway use or the elimination of permanent pavement markings, the following details shall be abided by.

- Those performing the operation shall be responsible for coordinating the procurement, installation, maintenance, and removal, as applicable, of pavement markings, temporary or permanent, and any NO CENTER STRIPE signs.
- Temporary pavement markings and any NO CENTER STRIPE signs shall be in place prior to opening a roadway to traffic.
- Temporary centerline and lane line pavement markings and any NO CENTER STRIPE signs shall be in accordance with Standard Plan 620.10. Note: Temporary marking of edgelines is not required.
- Permanent pavement markings should be installed no later than 15 calendar days after an operation has been completed. However, every effort should be expended to limit any delay.
- Removal or obliteration of all pavement markings shall be complete and leave minimal pavement scarring. Concealing any pavement marking with black paint or asphalt is not acceptable.

### **Pavement Maintenance Operations**

When needed, FRESH OIL, LOOSE GRAVEL, or FRESH OIL/LOOSE GRAVEL signs, as applicable, shall be incorporated into the advance warning signs at the prescribed spacing. Signs should also be installed within 150 feet after the intersection of a state highway and at one-mile spacing throughout the affected area. Upon the discretion of the supervisor, additional signs may be installed within 150 feet after other intersections.

When a sign placed at the one-mile interval and one placed after an intersection fall within one-eighth mile of each other, the sign placed at the one-mile interval may be eliminated.

Please ensure this information is forwarded to those who may be affected by the changes. Should you require any clarification, contact Scott Stotlemeyer, technical support engineer-maintenance, at 573-526-1759 or stotls. Thank you.

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Note: With the enactment of these changes, Traffic will remove any reference to temporary pavement marking from Chapter 3 of the Marking Section of the *Traffic Manual*.